IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT:	Richard T. Gregory
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FOR:	SYSTEM AND METHOD FOR DISTRIBUTED PRINTER PROCESSING
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EXAMINER:	Hilina S. Kassa
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CERTIFICATE OF DEPOSIT

DATE OF DEPOSIT: **May 12, 2008**

I hereby certify that this paper or fee (along with any paper or fee referred to as being attached or enclosed) is being facsimile transmitted to the USPTO or being electronically deposited using EFS Web with the United States Patent Office on the date indicated above.

/Steve M. Perry/

Steve M. Perry

APPELLANT'S APPEAL BRIEF UNDER 37 C.F.R. § 41.37

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450
Mail Stop Appeal Brief – Patents

Sir:

Appellant submits this Appeal Brief in connection with their appeal from the final rejection of the Patent Office, mailed February 11, 2008, hereinafter "Final Patent Office Rejection," in the above-identified application. A Notice of Appeal was filed on May 12, 2008.

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I. REAL PARTY IN INTEREST

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

Appellant and Appellant's legal representatives know of no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1-31 are pending. Claims 1-31 were rejected by the Examiner. The claims on appeal in this application are claims 1-31.

IV. STATUS OF AMENDMENTS

No amendments to the presently pending claims have been made since the Office Action mailed on February 11, 2008, and all the claim amendments have been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

1. A method for distributed processing of print jobs using multiple printer processors and centralized printing (page 2, lines 17-18; page 6, lines 32-33), comprising the steps of:

dividing a print job into a plurality of print job segments in a print distribution module 10 (FIG. 1; page 2, lines 18-20; page 6, line 34-page 7, line 1);

transmitting the plurality of print job segments to one or more distribution responsive printers 40 (FIG. 1; page 2, lines 20-21; page 7, lines 9-10);

processing the plurality of print job segments into a plurality of print engine-ready data segments using the one or more distribution responsive printers (page 2, lines 21-22; page 7, lines 21-22; page 5, lines 18-23);

assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module (page 2, lines 22-24; page 7, lines 24-26; page 5, lines 29-30; page 6, line 10-11); and

printing the assembled plurality of print engine-ready data segments at a target printer 60 when the plurality of segments is received from the print distribution module (FIG. 1; page 2, lines 24-25; page 7, lines 24-30).

8. A method as in claim 1, wherein the step of transmitting the plurality of print job segments further involves the step of transmitting a first print job segment of the plurality of print job segments to a target printer 60 to be printed and transmitting remaining print job segments to the one or more distribution responsive printers 40 (FIG. 1; page 7, lines 14-16).

10. A method as in claim 1, wherein the step of assembling the plurality of print engine-ready data segments further involves the step of sending the plurality of print engine-ready data segments from the print distribution module 20 to the target printer 60 (FIG. 1; page 7, lines 26-29).

16. A method as in claim 1 wherein the step of assembling the plurality of print engine-ready data segments further comprises the step of transmitting the plurality

of print engine-ready data segments from the distribution responsive printers 40 to the print distribution module 20 (FIG. 1; page 5, lines 29-34; page 6, lines 10-11).

18. A printing system to distribute processing of print jobs using multiple printer processors and centralized printing (page 2, lines 17-18; page 6, lines 32-33), comprising:

a print distribution module 20 configured to divide a print job into a plurality of print job segments (FIG. 1; page 2, lines 18-20; page 6, line 34-page 7, line 1);

a distribution responsive printer 40 configured to receive and process one or more of the plurality of print job segments from the print distribution module into one or more print engine-ready data segments (FIG. 1; page 2, lines 20-22; page 7, lines 9-10, 21-22; page 5, lines 18-23); and

wherein the print distribution module is further configured to assemble one or more print engine-ready data segments from the distribution responsive printer after processing (page 2, lines 22-24; page 7, lines 24-26; page 5, lines 29-30; page 6, line 10-11).

19. A system as in claim 18, wherein the print distribution module is configured to transmit a first print job segment of the plurality of print job segments to a target printer 60 to be printed (FIG. 1; page 7, lines 14-16).

20. A system as in claim 19, wherein the print distribution module 20 is configured to transmit a remainder of the print job segments to one or more distribution responsive printers 40 (FIG. 1; page 7, lines 14-16).

21. A system as in claim 20, wherein the target printer 60 is a distribution responsive printer 40 (FIG. 1; page 7, lines 18-19).

30. A printing system to distribute processing of print jobs using multiple printer processors and centralized printing (page 2, lines 17-18; page 6, lines 32-33), comprising:

a print distribution means 20 for dividing a print job into a plurality of print job segments (FIG. 1; page 2, lines 18-20; page 6, line 34-page 7, line 1);

a distribution responsive printer means 40 for receiving and processing one or more of the plurality of print job segments from the print distribution means into one or more print engine-ready data segments (FIG. 1; page 2, lines 20-22; page 7, lines 9-10, 21-22; page 5, lines 18-23);

wherein the print distribution means is further configured to assemble one or more print engine-ready data segments from the distribution responsive printer after processing (page 2, lines 22-24; page 7, lines 24-26; page 5, lines 29-30; page 6, line 10-11); and

a target printer means 60 for receiving the one or more print engine-ready data segments from the print distribution means and for printing the one or more print engine-ready data segments (FIG. 1; page 2, lines 24-25; page 7, lines 24-30).

31. An article of manufacture, comprising:

a computer usable medium having computer readable program code embodied therein for distributed processing of print jobs using multiple printer processors and centralized printing (page 2, lines 17-18; page 6, lines 32-33), the computer readable program code in the article of manufacture comprising:

computer readable program code for dividing a print job into a plurality of print job segments in a print distribution module 20 (FIG. 1; page 2, lines 18-20; page 6, line 34-page 7, line 1);

computer readable program code for transmitting the plurality of print job segments to one or more distribution responsive printers 40 (FIG. 1; page 2, lines 20-21; page 7, lines 9-10);

computer readable program code for processing the plurality of print job segments into a plurality of print engine-ready data segments using the one or more distribution responsive printers (page 2, lines 21-22; page 7, lines 21-22; page 5, lines 18-23);

computer readable program code for assembling the plurality of print engine-ready data segments from the one or more distribution responsive printers at the print distribution module (page 2, lines 22-24; page 7, lines 24-26; page 5, lines 29-30; page 6, line 10-11); and

computer readable program code for printing the plurality of print engine-ready data segments at a target printer 60 when the plurality of segments is

received from the print distribution module (FIG. 1; page 2, lines 24-25; page 7, lines 24-30).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The issues presented for review are:

a. Whether claims 1-11, 15-25, and 28-30 are anticipated under 35 U.S.C. § 102(e) by Barry et al. (US Patent Number 7,099,027 B1), hereinafter "Barry"; and

b. Whether claims 12-14 and 26-27 are patentable under 35 U.S.C. § 103(a) over Barry in view of Shima (US Publication Number 2004/0158654 A1), hereinafter "Shima."

VII. ARGUMENT

A. Background

Large and medium size businesses often have printers distributed around the business. Printers usually have processors that receive print job information and convert the information into a form that allows the printer to correctly place the ink or toner on the printed page. When an employee prints a large volume of material, or complex print jobs containing extensive graphics, even high speed printers can become bogged down.

Many printers have been optimized to print text pages at high speed. Graphical images, however, contain a much larger amount of information that is usually processed by the printer processor before the information can be printed. A medium sized picture may contain several megabytes of data, requiring the printer processor to rasterize a large amount of information in order to generate the points of ink or toner for the output page. The processing of this graphics information can take printers more time than the actual printing, which can cause a significant delay between the printing of each page.

B. Appellant's System and Method

Appellant's system and method provides a cost effective and efficient way to increase the speed of printing without having to purchase additional or more costly printers. The Appellant's system and method distributes the processing of print jobs using multiple printer processors, and then centralizes printing. The system includes a print distribution module 20 in communication with two or more distribution responsive printers 40 and a target printer 60, as shown in FIG. 1 of the application, which has been reproduced below. The print distribution module can be a hardware

or software device that communicates with a digital device 10, a target printer 60, and one or more distribution responsive printers 40 through a network 30.

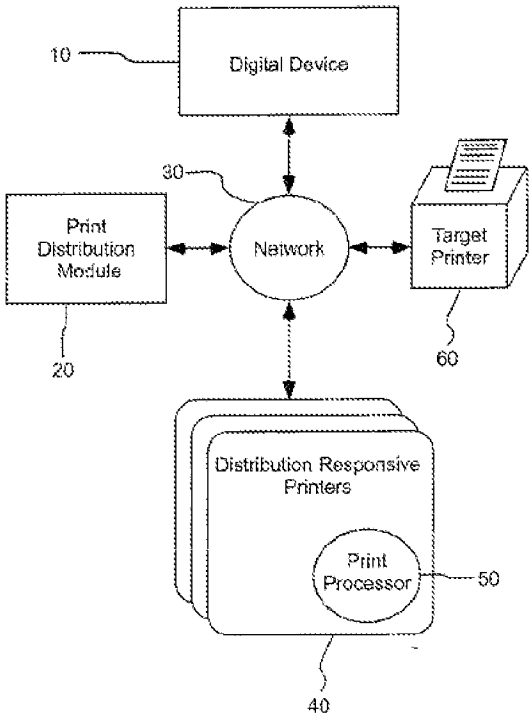

FIG. 1

The method includes the step of dividing a print job into a plurality of print job segments in a print distribution module 20. Another step is transmitting the plurality of print job segments to one or more distribution responsive printers 40. An additional step is processing the plurality of print job segments into a plurality of print engine-ready data segments using the one or more distribution responsive printers. One more step is assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module. A further step is printing the assembled plurality of print engine-ready data

segments at a target printer 60 when the plurality of segments is received from the print distribution module.

The print distribution module 20 can divide the print job into a plurality of print job segments, if the print job consists of relatively complex or lengthy data. Distribution responsive printers are printers that receive the print job segments from the print distribution module and process the print job segments into rasterized or print engine-ready data segments. After the print engine-ready data segments are generated, the print engine-ready data segments are combined and streamed into a single target printer for printer.

Because the bottleneck with printing graphics or images is often in the conversion of the data file into a format native to the printer (not in the actual printing of the converted filed), distributing the conversion process to unused printer processors of other network printers can efficiently increase the speed of printing. The distribution of print job segments, the merging of the print engine-ready data segments, and the printing of the combined print engine-ready data segments on a single target computer is concealed from the view of the user, as the entire print job data file appears to be processed and printed from a single printer.

C. The Asserted References

1. The Barry Reference

Barry discloses a method and apparatus for distributing print job segments to a plurality of printers (See Abstract and Field of the Invention). The print job is routed to a distribution node on the network (Barry col. 1, lines 49-50). The parameters (total number of pages or type of material—graphics, text, color, monochrome, etc.) for efficient parallel conversion processing of a print job are parsed from the generated

print job (Barry col. 1, lines 49-50; col. 3, lines 59-63; col. 4, lines 19-20). The parameterized print job includes predetermined metrics (e.g. cost factors or time constraints) that are a function of at least one of the parsed parameters (Barry col. 1, lines 50-53; col. 31, lines 52-53; col. 32, lines 29-30). Based on the parameterized print job, the distribution node segments the print job into multiple print job files that are routed to multiple printers on the network (Barry col. 1, lines 53-55; col. 4, line 65-col. 5, line 4).

For example, FIG. 1b of Barry, which has been reproduced below, shows a distribution node 118 splitting a print job into multiple selection portions 140, 144, & 148. Each segment is **raster image processed (RIP) and printed** 150, 152, & 154, so plurality of physical printed outputs (e.g. hard copies on paper) of the print job are physically located on separate printers (Barry, col. 3, lines 2-3; col. 4, line 65-col. 5, line 21; col. 5, lines 39-41). In an optional merge step, the printed outputs (on paper) can be mechanically collated into a single job, if the printers for a print job are not in different physical locations (col. 5, lines 14-21).

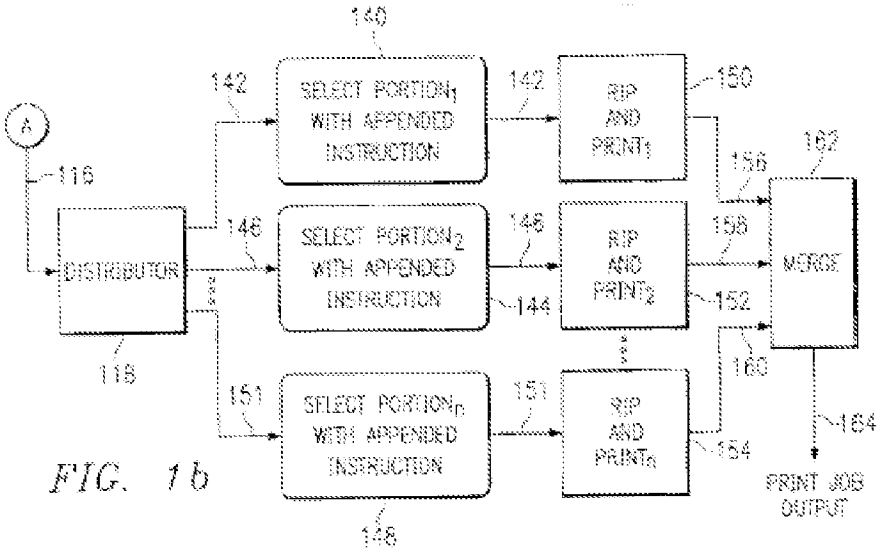

FIG. 1b

FIG. 1b

Barry makes no distinction between printers or marking engines M1-M4 receiving segments from the virtual printer distributor, because each printer prints out the print job segments sent to them, as shown in FIG. 24 of Barry, which has been reproduced below. In contrast, the distribution responsive printers and a target printer of the present application have distinct functions in the printing process. The print device 2402 and the virtual printer 2404 of Barry both RIP and print their own print job segments. In addition, the virtual printer is not a physical printer (col. 28, lines 2-4).

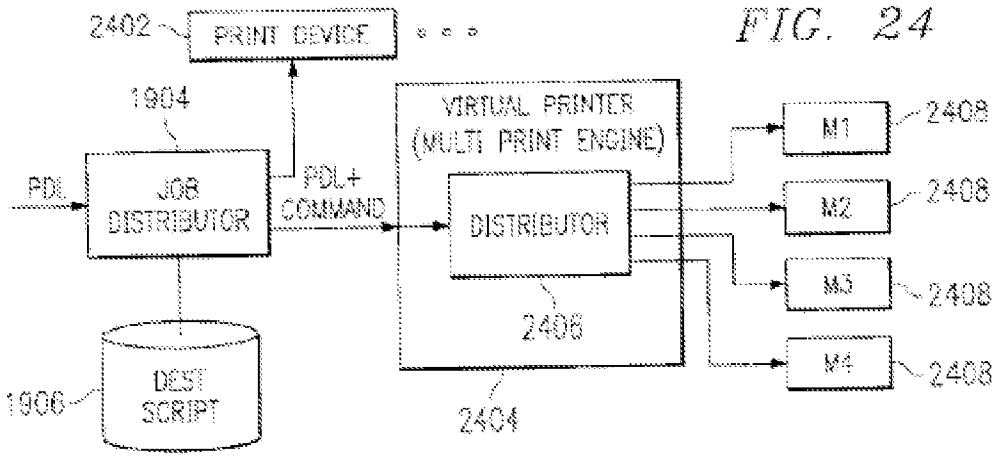

FIG. 24

Furthermore, Barry never discloses the plurality of job segments merging into the distribution module as in the claimed invention. For example, FIG. 5b of Barry, which has been reproduced below, along with FIG. 1b and FIG. 24 only show the distributor segmenting the print job that are printed as separate outputs, or the segmentation process of a PDL file.

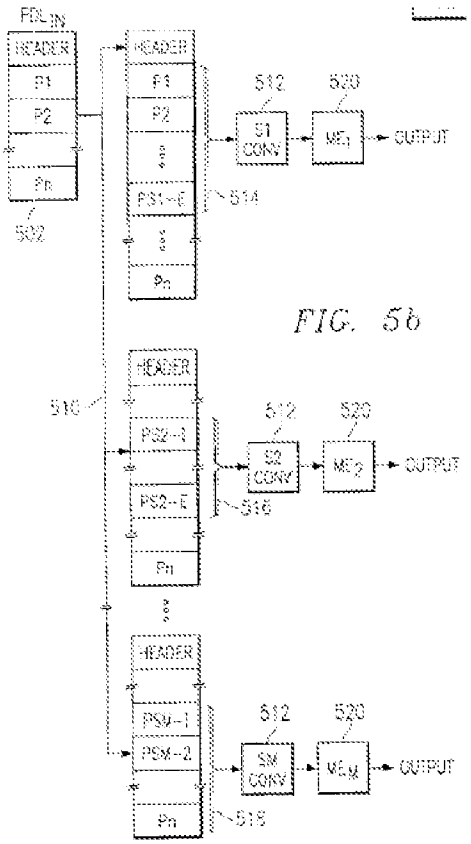

FIG. 5b

FIG. 5b

2. The Shima Reference

Shima discloses a printing system that manages multiple duplicate copies of a print job by distributing the copies to alternative printing devices (Shima paragraph [0008]). Particularly, the printer receiving the print job changes the number of copies to be printed to '1 copy' and distributes the other copies to be printed to other alternative printers (Shima paragraph [0080]). Shima also discloses the availability of alternative printing devices for printing the copies (Shima paragraph [0104]).

D. Rejections Under 35 U.S.C. § 102(e)

1. Requirements for Anticipation

Before discussing the rejection, it is thought proper to briefly state what is required to sustain such a rejection. It is well settled that "[a] claim is anticipated only if each and every element as set forth in the Claims is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In order to establish anticipation under 35 U.S.C. § 102, all elements of the claim must be found in a single reference. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.,* 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 1606 (1987). In particular, as pointed out by the court in *W.L. Gore & Assoc., Inc. v. Garlock, Inc.,* 220 U.S.P.Q. 303, 313 (Fed. Cir. 1981), *cert denied,* 469 U.S. 851 (1984), "anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference." "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989). According to M.P.E.P. § 706.02 (IV), "for anticipation under 35 U.S.C. 102, the reference must teach every aspect of the claimed invention either explicitly or impliedly. Any feature not directly taught must be inherently present."

2. The rejection of Claims 1-11, 15-25, and 28-30 by Barry

Appellant submits that the Barry reference asserted by the Examiner does not disclose or teach each and every element of the rejected claims. As previously discussed, the Barry reference discloses distributing a print job to multiple printers by segmenting the print job into smaller sized pieces using a distribution node and physically printing those pieces in parallel to multiple printers.

Barry fails to disclose several elements of independent claim 1. One claim element not disclosed by Barry is "assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module." Another element that Barry does not contain is "printing the assembled plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module."

The present system and method, specifically claim 1, can be summarized as:

distributing a print job to multiple printers by segmenting the print job into smaller sized pieces,

processing those pieces into the print engine-ready data segments on the RIP engines of multiple printers,

assembling the print engine-ready data segments into a single print engine-ready data print job, and

printing the assembled print engine-ready data print job (placing the toner or ink on the physical pages) on **a single printer**.

The last two steps are not taught or suggested in any of the cited references provided by the Examiner.

The Appellant will discuss the claim elements of "assembling" and "printing" in reverse order from the sequence order in the claim. First, the Appellant will discuss the element of "printing the assembled plurality of print engine-ready data segments," and then discuss the element of "assembling the plurality of print engine-ready data segments."

First, Barry fails to disclose "printing the assembled plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module," as in independent claim 1. The Examiner asserts that

"the outputs of the RIP engines or PRINT1-n of figure 1b gets outputted or printed in along path 164 of figure 1b," (Final Patent Office Rejection, page 3, lines 3-4; Barry col. 5, lines 14-18). The assertion is not supported by the Barry reference. **Barry never discloses or suggests printing occurring after a merge along path 164** (Barry col. 5, lines 18, 41).

The Examiner also asserts that "distributor block is provided to distribute multiple segments of the print job to be processed," (Final Patent Office Rejection, page 3, lines 6-7). The assertion does not address the current claim language. The assertion only states that the Barry distribution node distributes print job segments, and this does not cover the claim that the distribution node receives print engine-ready data segments that have already been processed by RIP engines from a plurality of printers as in claim 1.

The Barry method segments the print job using a distribution node and RIPS and prints the print job segments on multiple printers (Barry FIG. 1b; col. 5, lines 6-14). In contrast, the method of claim 1 segments the print job, rasterizes or raster image processes (RIP) the segments on multiple printers, combines the processed (RIPPED) segments, and then prints the print job to a single printer.

In Barry, the merge block in FIG. 1b refers to mechanical or manual collation of the physical print outputs. Barry discloses the **merge block is optional**, meaning not critical to the distributive printing operation (Barry col. 5, line 15). Barry further discloses the merge operation is not necessary if the outputs of the RIP engines are in different locations (Barry col. 5, lines 19-21). This means that proximity of multiple printers to each other is important for the merge operation, and the inputs to the merge operation are printed segmented outputs (printed segments of a document). Only mechanical and manual processes are concerned with the location of the printers (with

RIP and print engines). In FIG. 1b, the print job segments are both RIPPED and physically printed 150-154 before the merge 162. Barry discloses that the RIP engine and print engines may be separate units or combined in the same unit, but a print job portion flows from the RIP engine to the print engine in the same printer (Barry col. 6, lines 6-14). So the RIP and print outputs 156-160 are printed segmented outputs before entering the merge block 162. The print job output 164 is printed segments that are mechanically or manually collated together to form a single printed output or job (printed document).

In addition, Barry never discloses or suggests any further printing or processing of the print job output 164, which further supports that the print job output is a printed document. **The print job output 164 is never sent back to the distribution node or a printer**, as is claimed by the present system and method. "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913 at 1920. A lack of disclosure, suggestion, or discussion of printing or processing after the print job output does not constitute showing every element of the claim as is required to show anticipation.

Further, FIG. 1b of Barry discloses the distributor 118 and merge 162 as separate units and Barry never suggests that the distributor 118 and merge 162 operations communicate with each other or are housed in the same unit. The reason the distributor 118 and merge 162 cannot communicate with each other and are not housed in the same unit is because they handle different forms of the print job. The distributor 118 handles the electronic form of the print job output and the merge 162 handles the physical printed form of the print job.

Furthermore, Barry does not disclose and does not suggest the print job output 164 is an electronic output in FIG. 1b (Barry col. 5, lines 15-18). Barry uses

rectangular boxes to represent processing on an input and uses arrows to show connectivity and flow from the output of one process to the input of the next process. Arrows show transferring of an output to another process, not processing or printing. Barry does not disclose and does not suggest the print job output 164 (a step connector or arrow) is sent to a print engine (a process step or box) to convert a electronically merged job into a merged printed job, because the merged print job is not electronic (Barry col. 5, lines 15-18). No print functional block (a process step or box) is shown after the merge 162 function block (a process step or box) and no print functional block follows the merge output called the print job output 164 (a step connector or arrow) in FIG. 1b. Thus, **no printing or processing of the print job output 164 occurs**. Barry discloses "parallel conversion processing and printing prior to becoming merged together to complete the print job along path 164," further clarifying that sequencing of the printing occurs prior to the merge (Barry col. 5, lines 39-41). Both the Barry diagram and specification disclose that all printing occurs prior to print job output path 164. Therefore, Barry fails to disclose "printing the assembled plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module," as in claim 1.

Barry also fails to disclose "assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module," of independent claim 1. The Examiner has cited a command string combined with Printer Description Language (PDL) file as disclosing assembling the plurality of print engine-ready data segments of the present method and system (Final Patent Office Rejection, page 2; Barry col. 27, lines 55-56). However, the Examiner has misconstrued the Barry reference and the sequence of the claim step elements relative to other steps to arrive at this interpretation.

The command string and the PDL file are not similar entities to each other (i.e. not both print engine-ready data segments). The relationship between the PDL and command string is shown in FIG. 24 of Barry as a "PDL + COMMAND" flow between the job distributor 1904 and the virtual printer 2406. Not only are the command string and the PDL file are not similar entities to each other, the command string and the PDL file are not similar to the print engine-ready data segment of independent claim 1. The command string is the appended instructions attached to the selected or segmented portions 140, 144, & 148 of the print job **before** the segments are RIPPED and printed, shown in Barry FIG. 1b (Barry col. 5, line 7). The command string may provide modified or substitute instructions for use by the RIP engine in converting the PDL file into a RIP file (Barry col. 5, lines 6-10). The **PDL file** is the format of the print job **before** processing by a RIP engine. In contrast, the **print engine-ready data segment** of claim 1 is the format of the print job segment **after** processing by a RIP engine. Barry clarifies the relationship between the PDL file and its associated command string and the RIP processing that follows: "This job distributor 2406 is operable to receive the PDL file and its associated command string and RIP the page into its appropriate pages and then route the pages to a plurality of marking engines 2408" (Barry col. 28, lines 6-9).

Furthermore, the citation provided by the Examiner also supports that the PDL file format occurs before RIP processing: "These segment pages [PDL segments] are then processed by a marking engine" (Final Patent Office Rejection, page 2; Barry col. 9, lines 54-55). Thus, Barry does not disclose assembling print engine-ready data segments (RIPPED) portions of a print job.

Barry also fails to disclose assembling the print engine-ready data segments by a **print distribution module**. The print distribution module of claim 1 divides,

transmits the segments to multiple printers, assembles the process segments (still in electronic form) the multiple printers, and transmits the assembled segments to the target printer. In contrast the distributor block 118 (FIG. 1b) in Barry only divides and transmits the segments to multiple printers. **The distributor block in Barry never receives segments after RIP engines process the print segment**.

The advantage of having the assembling function and transmitting function (of the segments to the target printer) in the print distribution module is that the communication is electronic so the location of the distribution responsive printers' RIP engines to the target printer's print engine is irrelevant. The RIP engines' connections to the distribution module and target printer on the network allow print jobs to be re-assembled. In contrast, Barry's merge 162 relies on the printer's physical location to other printers (with RIP and print engines).

Since the RIP engine function may be the bottleneck in the printing process, the print distribution module of claim 1 distributes the RIP engine function among available printers and combines the resulting print engine-ready data streams from those printers but leaves the physical printing to a single printer (the target printer) so the output does not need to be mechanically or manually merged.

The electronic merge function or "assembling the plurality of print engine-ready data segments" in claim 1 would not work to print a completed job if it was only **optional** as Barry discloses (Barry col. 5, lines 15). This is because the print engine-ready data segments are in a rasterized data format (electronic form), which is not yet printed before a merge. If the electronic rasterized data is not printed, then the Barry method would not create a completed printed job output, thus making the Barry method unusable to a user with a print job. Therefore, the Barry optional merge function cannot be electronic. In addition, Barry never discloses or suggests

combining data segments created by the RIP engines of the distribution responsive printers and sending the combined data streams to a target printer. The method of claim 1 has better performance than the schemes found in the prior art, since the printed output comes from a single printer already combined, and the location of the distribution responsive printers are not relevant so as long as they are connected by some means to the distribution module and the target printer.

Because Barry does not disclose assembling print job segments after processing by RIP engines (print engine-ready data segment) and a distribution node receiving any segments after distributing and processing the segments, Barry does not disclose the element of "assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module," of claim 1. As discussed previously, Barry also does not teach or suggest "printing the assembled plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module" (also claim 1).

Thus, Barry does not disclose or teach each and every element of independent claim 1. The same arguments apply to independent claims 18, 30, and 31, which contain similar features to claim 1. Therefore, Appellant submits that the rejection of independent claims 1, 18, 30, and 31 under § 102(e) should be reversed.

The Appellant also submits that the dependent claims 8, 10, 16, 19, and 21 presented herein also contain patentably distinct subject matter.

In addition to Barry failing to disclose each of the elements in claim 1, Barry also does not disclose "the step of transmitting a first print job segment of the plurality of print job segments to a target printer to be printed and transmitting remaining print job segments to the one or more distribution responsive printers," as is claimed in claim 8.

The Examiner asserts "the professed segments of print jobs get distributed to one of the plurality of print devices or a virtual print engine" (Final Patent Office Rejection page 3, 8; Barry, col. 27, line 66- col. 28, line 16). The elements of the assertion do not function in a similar manner to the elements of claim 8.

Claim 8 claims the first print job segment can be transmitted to the target printer to be RIPPED and physically printed, while the other print job segments can be sent to distribution responsive printers for RIPPING only. The other print job segments can finish processing on the distribution responsive printers and these segments can be transmitted to the target printer while first print job segment finishes processing and prints on the target printer. Claim 8 makes a distinction between a target printer that actually places toner or ink on a page and distribution responsive printers that only rasterize or RIP the document.

Barry describes printing devices 2402 & 2408 that place toner or ink on a page and distributors 1904 & 2406 used to segment the PDL file, as shown in FIG. 24 (referenced in the Examiner's citation). The main job distributor 1904 can send a PDL file (not segmented) to a print device 2402 or a multi-print engine 2404 with its own job distributor (a second job distributor) 2406 (Barry col. 27, lines 66-col. 28, line 9). The multi-print engine 2404 is a specialized printer that can further segment a PDL file and send pages to multiple printers (marking engines). Although the second job distributor can RIP and segment the PDL file into pages, the second job distributor routes the pages to a plurality of printers (marking engines) 2408, instead of a single printer as is claimed in claim 8 (Barry col. 28, lines 6-9). None of the printers in Barry send a plurality of print engine-ready data segments back to a single printer. **The printers in Barry do not send or receive data from other printing devices directly or via the job distributor**. The printers in Barry only receive data from a PDF file

through job distributors (not printers). In Barry, data only flows one-way from a PDF file to a job distributor to a printer. In contrast, the present system and method allows bidirectional print data between a distributor and printers, so the print data can flow from a distributor to a printer and back to the distributor, and then to another printer.

In addition, Barry does not make a distinction between printer functionality in FIG. 24, since all printers print or mark a portion of the file in a similar manner. In FIG. 24, similar labeling and identical numbering of marking engines M1-M4 2408 supports the lack of distinction in printer functionality. All the printers in FIG. 24 of Barry are alike in the marking or print function. In contrast, the function of the target printer and the distribution responsive printers in claim 8 are distinct. The distribution responsive printers (although capable of RIPPING and printing) only RIPs the print job segments, while the target printer actually prints the entire job, but can also RIP the print job segments like the distribution responsive printers prior to printing the entire job.

Thus, Barry does not disclose claim 8's step of transmitting a first print job segment of the plurality of print job segments to a target printer to be printed and transmitting remaining print job segments to the one or more distribution responsive printers. Therefore, Barry does not disclose or teach each and every element of dependent claim 8, and the rejection of claim 8 under § 102(e) should be reversed.

Claims 19 and 20 have also been rejected using the same pin point citation in Barry and the same reasoning as in claim 8, so the rejection of these claims should also be reversed for the same reasons.

Furthermore, Barry fails to disclose the step of "sending the plurality of print engine-ready data segments from the print distribution module to the target printer,"

of dependent claim 10. The Examiner asserts "that the job distributor 1904 sends the segments of data to the virtual printer 2404" (Final Patent Office Rejection page 4, 9; Barry col. 27, lines 66-col. 28, line 9). The assertion confuses segments of data with print engine-ready data segments and Barry does not disclose the print distribution module with the functionality of claim 10.

The virtual printer of Barry receives the PDL file (not print engine-ready data segments) from the job distributor 1904 and RIPs the PDL file into pages (print engine-ready data segments) and routes the pages to a plurality of marking engines (Barry col. 28, lines 6-9). Claim 10 has at least three distinct differences from the Barry reference. First, the virtual printer does not receive a "plurality of print engine-ready data segments," as in claim 10. The virtual printer receives the PDL file used by the virtual printer RIP engine to create print engine-ready data or RIPPED data. Second, the virtual printer further expands or segments the printing by routing the RIPPED segments to be printed using a plurality of print engines. In contrast, claim 10 consolidates the actual printing to a single device, the target printer. Third, the virtual printer 2404 of Barry is a specialized printer with a job distributor containing a central RIP engine used to RIP, segment, and send a PDL file to a plurality of print engines (marking engines). In contrast, claim 10 is enable to work with typical printers with standard printing components (a single RIP engine and a single print engine). The Examiner's assertion is not the similar to "sending the plurality of print engine-ready data segments from the print distribution module to the target printer," of dependent claim 10. Therefore, Barry does not disclose or teach each and every element of dependent claim 10, and the rejection of dependent claim 10 under § 102(e) should be reversed.

Still further, Barry fails to disclose the step of "transmitting the plurality of print job engine-ready data segments from the distribution responsive printers to the print distribution module," of dependent claim 16. The Examiner asserts "note the plurality of the segments or pages and segments get distributed as shown in 502 figure 5b" (Final Patent Office Rejection page 4, 9-10; Barry col. 11, lines 14-36; FIG 5b). The assertion does not address the function of claim 16. FIG. 5b of Barry, only shows arrows expanding or leading away from 502, to 510, 512, and 520. The PDL file never combines or merges segments into a distribution module as is claimed in claim 16. The PDL file only divides or separates into segments (Barry col. 11, lines 14-36; FIG 5b). In addition, the PDL file is not similar to print job engine-ready data segments, which has already been discussed. Therefore, Barry does not disclose or teach each and every element of dependent claim 16, and the rejection of dependent claim 16 under § 102(e) should be reversed.

Rejection of the dependent claims 2-11, 15-17, 19-25, 28, and 29 should be reconsidered and the rejection reversed for at least the reasons given above with respect to the independent claims. The dependent claims, being narrower in scope, are allowable for at least the reasons for which the independent claims are allowable.

Therefore, Appellant submits that the rejection of dependent claims 2-11, 15-17, 19-25, 28, and 29 under § 102(e) should be reversed.

E. Rejections Under 35 U.S.C. § 103(a)

1. Requirements for Prima Facie Obviousness

The Examiner has rejected some of the pending claims under § 103(a) as being *prima facie* obvious over a number of references. The Patent and Trademark Office

(PTO), through the Examiner, has the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1998). To satisfy this burden, the PTO must meet the criteria set out in M.P.E.P. § 706.02(j):

> [T]hree basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck,* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Moreover, the obviousness analysis must comply with the statutory scheme as explained by the Supreme Court in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), namely, consideration must be given to: (1) the scope and content of the prior art, (2) the differences between the prior art and the claimed invention, (3) the level of ordinary skill in the pertinent art, and (4) additional evidence, which may serve as indicia of non-obviousness.

In order to combine references, the prior art must provide some reason or motivation to make the claimed compositions, *In re Dillon*, 16 U.S.P.Q.2d 1897, 1901 (Fed. Cir. 1990). As aptly stated in *In re Jones*, 21 U.S.P.Q.2d 1941, 1943-44 (Fed. Cir. 1992):

> "Before the PTO may combine the disclosure of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art... Conspicuously missing from this record is any *evidence*, other than the PTO's speculation (if it be called evidence) that one of ordinary skill in the...art would have been motivated to make the modifications of the prior art necessary to arrive at the claimed (invention)."

An excellent summary of how the prior art must be considered to make a case of *prima facie* obviousness is contained in *In re Ehrreich et al.*, 220 U.S.P.Q. 504, 509-511 (CCPA 1979). There the court states that a reference must not be considered in a vacuum, but against the background of the other references of record. It is stated that the question of a § 103 case is what the reference(s) would "collectively suggest" to one of ordinary skill in the art. However, the court specifically cautioned that the Examiner must consider the entirety of the disclosure made by the reference and avoid combining them indiscriminately.

In finding that the "subject matter as a whole" would not have been obvious in *Ehrreich* the court concluded:

> "Thus, we are directed to no combination of prior art references which would have rendered the claimed subject matter as a whole obvious to one of ordinary skill in the art at the time the invention was made. The PTO has not shown the existence of all the claimed limitations in the prior art or any suggestion leading to their combination in the manner claimed by applicants." (underlining added)

It is true that an obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not. See *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742 (U.S. 2007). However, it has been widely recognized that virtually every invention is a combination of elements and that most, if not all, of these will be found somewhere in an examination of the prior art. This reasoning lead the court, in *Connell v. Sears, Roebuck & Co.*, 220 U.S.P.Q. 193, 199 (Fed. Cir. 1983) to state:

> "...it is common to find elements or features somewhere in the prior art. Moreover, most if not all elements perform their ordained and expected function. The test is whether the claimed invention as a whole, in light of all the teachings of the

> references in their entireties, would have been obvious to one of ordinary skill in the art at the time the invention was made." (underlining added)

With the above background in mind, Appellant contends that the Examiner has not met this burden with respect to the claims rejected under § 103. Particularly, Appellant submits that the PTO has failed to show that each and every element of the claimed invention is contained in the combined references, and has not shown that there was sufficient reason to modify the asserted prior art references to achieve the present invention. Appellant now turns to a discussion of the individual rejections at issue, and the references on which they are based.

2. The rejection of Claims 12-14 and 26-27 over Barry in view of Shima

According to M.P.E.P. § 706.02(j), to render a claim *prima facie* obvious, the asserted prior art reference (or references when combined) must teach or suggest all of the claim limitations. Appellant submits that the combinations asserted by the Examiner do not teach or suggest each and every element of the rejected claims.

As previously discussed, the Barry reference discloses distributing a print job to multiple printers by segmenting the print job into smaller sized pieces using a distribution node and physically printing those pieces in parallel to multiple printers.

Also discussed previously, Shima discloses a printing system that manages the production of multiple duplicate copies of a print job by distributing the copies to alternative printing devices. Particularly, the printer receiving the print job changes the number of copies to be printed to '1 copy' and distributes the other copies to be printed to other alternative printers.

The Barry and Shima references, when combined, do not teach or suggest all of the elements of the independent claims, and subsequent dependent claims 12-14 and 26-27. Specifically, the Barry reference does not disclose "assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module," of claim 1. Nor does Barry disclose "printing the assembled plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module," also of claim 1. The Shima reference does not overcome these deficiencies.

Thus, the combination of Barry and Shima do not teach or suggest each of the elements in the independent claims.

Rejection of the dependent claims 12-14 and 26-27 should be reconsidered and reversed for at least the reasons given above with respect to the independent claims. The dependent claims, being narrower in scope, are allowable for at least the reasons for which the independent claims are allowable.

Therefore, Appellant submits that the rejection of dependent claims 12-14 and 26-27 under § 103(a) should be reversed.

F. Conclusion

Appellant respectfully submits that the claims on appeal set forth in the Appendix are patentably distinct from the asserted prior art references. Particularly, the Barry reference does not teach every aspect of the claimed invention within the meaning of 35 U.S.C. § 102(e). Appellant further contends none of the asserted combinations of references motivates, teaches, or suggests one of ordinary skill in the art within the meaning of 35 U.S.C. § 103(a) to arrive at the presently claimed invention. Appellant contends that Barry in combination with Shima fails to teach each and every element of the claimed invention.

For these reasons, Appellant respectfully requests that the Board of Appeals reverse the rejection and remand the case to the Examiner for allowance.

Dated this 12th day of May, 2008:

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VIII. CLAIMS APPENDIX

1. A method for distributed processing of print jobs using multiple printer processors and centralized printing, comprising the steps of:

dividing a print job into a plurality of print job segments in a print distribution module;

transmitting the plurality of print job segments to one or more distribution responsive printers;

processing the plurality of print job segments into a plurality of print engine-ready data segments using the one or more distribution responsive printers;

assembling the plurality of print engine-ready data segments received from the one or more distribution responsive printers at the print distribution module; and

printing the assembled plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module.

2. A method as in claim 1, further comprising the step of sending the print job from a digital device to the print distribution module.

3. A method as in claim 2, wherein the step of sending the print job from a digital device to a print distribution module further comprises the step of sending the print job from the digital device to the print distribution module through a wired connection.

4. A method as in claim 2, wherein the step of sending the print job from a digital device to the print distribution module further comprises the step of sending the print job from the digital device to the print distribution module through a wireless connection.

5. A method as in claim 2, wherein the step of sending the print job further comprises the step of sending the print job from a digital device to a print distribution module through a computer network.

6. A method, as in claim 1, further comprising the step of configuring firmware of the one or more distribution responsive printers to receive print job segments in a variety of common print languages.

7. A method as in claim 1, wherein the step of dividing the print job further comprises the step of dividing the print job into print job segments that are a single printed page.

8. A method as in claim 1, wherein the step of transmitting the plurality of print job segments further involves the step of transmitting a first print job segment of the plurality of print job segments to a target printer to be printed and transmitting remaining print job segments to the one or more distribution responsive printers.

9. A method as in claim 1, wherein the step of processing the plurality of print job segments further comprises the step of processing the plurality of print job segments using two or more distribution responsive printers.

10. A method as in claim 1, wherein the step of assembling the plurality of print engine-ready data segments further involves the step of sending the plurality of print engine-ready data segments from the print distribution module to the target printer.

11. A method as in claim 1, further comprising the step of determining which types of distribution responsive printer connected to the network will be used for processing the print job.

12. A method as in claim 11, further comprising the step of determining an operational state of each of the two or more distribution responsive printers that are connected to a network.

13. A method as in claim 12, wherein the step of transmitting the plurality of print job segments to one or more distribution responsive printers, further comprises the step of transmitting the plurality of print job segments to one or more distribution

responsive printers that are determined to be a similar model as the target printer.

14. A method as in claim 12, further comprising the step of transmitting the plurality of print job segments to one or more distribution responsive printers that are determined to be available by the print distribution module.

15. A method as in claim 1, wherein the step of assembling the plurality of print engine-ready data segments further comprises the step of assembling the plurality of print engine-ready data segments from the distribution responsive printers by querying the one or more distribution responsive printers with the print distribution module.

16. A method as in claim 1 wherein the step of assembling the plurality of print engine-ready data segments further comprises the step of transmitting the plurality of print engine-ready data segments from the distribution responsive printers to the print distribution module.

17. A method as in claim 16, wherein the step of transmitting the plurality of print engine-ready data segments is performed immediately after an individual print engine-ready data segment from the plurality of print job segments has completed processing.

18. A printing system to distribute processing of print jobs using multiple printer processors and centralized printing, comprising:

a print distribution module configured to divide a print job into a plurality of print job segments;

a distribution responsive printer configured to receive and process one or more of the plurality of print job segments from the print distribution module into one or more print engine-ready data segments; and

wherein the print distribution module is further configured to assemble one or more print engine-ready data segments from the distribution responsive printer after processing.

19. A system as in claim 18, wherein the print distribution module is configured to transmit a first print job segment of the plurality of print job segments to a target printer to be printed.

20. A system as in claim 19, wherein the print distribution module is configured to transmit a remainder of the print job segments to one or more distribution responsive printers.

21. A system as in claim 20, wherein the target printer is a distribution responsive printer.

22. A system as in claim 18, wherein the print distribution module is configured to divide and transmit a remainder of the print job segments between one or more distribution responsive printers and the target printer.

23. A system as in claim 18, wherein the printing system further comprises a computer network.

24. A system as in claim 23, wherein a digital device is connected to the network to send a print job.

25. A system as in claim 24, wherein the digital device is configured to transmit a print job to the print distribution module.

26. A system as in claim 18, wherein the print distribution module is configured to determine the model and status of each distribution responsive printer connected to a network.

27. A system as in claim 20, wherein the print distribution module is configured to transmit a remainder of the print job segments to one or more distribution responsive printers when the print distribution module has determined the one or more distribution responsive printers are not busy.

28. A system as in claim 20, wherein the print distribution module is configured to query one or more distribution responsive printers to which a remainder of the print job segments have been sent, and assemble the remainder of the print engine-ready data segments when one or more distribution responsive printers have completed processing the remainder of the print engine-ready data segments.

29. A system as in claim 28, wherein the print distribution module is configured to receive print engine-ready data segments from processing of a remainder of the print job segments at the distribution responsive printers as soon as the print engine-ready data segments are available.

30. A printing system to distribute processing of print jobs using multiple printer processors and centralized printing, comprising:

a print distribution means for dividing a print job into a plurality of print job segments;

a distribution responsive printer means for receiving and processing one or more of the plurality of print job segments from the print distribution means into one or more print engine-ready data segments;

wherein the print distribution means is further configured to assemble one or more print engine-ready data segments from the distribution responsive printer after processing; and

a target printer means for receiving the one or more print engine-ready data segments from the print distribution means and for printing the one or more print engine-ready data segments.

31. An article of manufacture, comprising:

a computer usable medium having computer readable program code embodied therein for distributed processing of print jobs using multiple printer processors and centralized printing, the computer readable program code in the article of manufacture comprising:

computer readable program code for dividing a print job into a plurality of print job segments in a print distribution module;

computer readable program code for transmitting the plurality of print job segments to one or more distribution responsive printers;

computer readable program code for processing the plurality of print job segments into a plurality of print engine-ready data segments using the one or more distribution responsive printers;

computer readable program code for assembling the plurality of print engine-ready data segments from the one or more distribution responsive printers at the print distribution module; and

computer readable program code for printing the plurality of print engine-ready data segments at a target printer when the plurality of segments is received from the print distribution module.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None